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(*a*) Some asparagus berries which had been gathered in September, 1886, were found, a month or two later, to show black spots in the interior. In the blackened substance of the berry, mycelial threads were frequently found, but fruiting specimens were rare. The black spots were thought to be due to chemical changes in the berry produced by fungi. The fungus which causes this is probably *Penicillium glaucum*. The determination was made according to the figure of this fungus given by Beale.*

The contents of the berry would seem to furnish a favorable medium for the growth of fungi. Reinsch, in 1870 (according to the National Dispensatory 1879, p. 249), found in the berries considerable grape sugar.

(*b*) External spotting of the berry is due to the growth of fungi on the surface. This was noticed in berries which remained on the stems some time after ripening. The stems are covered at times with a black incrustation which may extend to the berry and involve more or less of its surface. The most common cause of this is the growth of *Cladosporium*.

This brief note will have fully served its purpose if it calls attention to these growths and thus better fruited specimens (than I have as yet found) are secured. As is well known, the most common fungi on decaying vegetable matter are *Macrosporium* and *Cladosporium*. J. B. Ellis (in letter of January 28, 1887), has said:

> It is not improbable that with the proper degree of heat and moisture one or the other of these would make its appearance on the berries in the form of a velutinous or fine hair-like growth of fertile threads bearing the spores or conidia peculiar to one or the other of these genera.

At present nothing farther can with certainty be said.

AN EXPERIMENT IN PREVENTING THE INJURIES OF POTATO-ROT (*Phytophthora infestans.*)†

By CLARENCE M. WEED.

(1) The experiment reported by the author was undertaken to determine what effect the application of a solution of sulphate of copper and lime (known as the Bordeaux mixture) to the foliage of potatoes would have in preventing the injuries of the potato-rot, and was conducted on the grounds of the Ohio Agricultural Experiment Station.

(2) Fifteen feet at the end of each of twenty rows of potatoes were

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* Microscope in Medicine, fourth edition, Fig. 7, Plate XXV.

† Summary of a paper read before the Society for the Promotion of Agricultural Science, August 27, 1889.

sprayed with the Bordeaux mixture four times, viz, May 28, June 6, June 29, and July 16. Four varieties were included in the experiment, viz, Early Ohio, Early Oxford, Puritan, and Lee's Favorite.

(3) The season proved favorable for the development of the blight, which appeared in the experimental field about the middle of June, and did serious damage for the next six weeks.

(4) The sprayed vines showed much less injury than their unsprayed companions, remaining green after the others were dead.

(5) The crop was harvested August 22, and the product of 12½ feet of the sprayed part of each row was compared with the product of an equal distance of the unsprayed portion of the same row. The results have been summarized as follows:

(*a*) From the treated portions of four rows of the Early Ohio variety, 536 potatoes, weighing 67 pounds 4 ounces, were obtained, of which 231 were of marketable size and weighed 48 pounds 6 ounces; while from the untreated portions of the same rows 496 potatoes weighing 50 pounds were obtained, 200 of which were marketable, and weighed 34 pounds 4 ounces. There was thus an increase in favor of the treated hills of 17 pounds 4 ounces total product, and 14 pounds 2 ounces marketable product.

(*b*) The treated portions of five rows of Early Oxford potatoes yielded a total of 622 tubers, weighing 87 pounds 1 ounce, of which 321, weighing 70 pounds 4 ounces, were marketable, while the untreated hills of the same rows yielded a total of 707 tubers, weighing 77 pounds 4 ounces, of which 267, weighing 53 pounds 2 ounces, were marketable. There was thus an increase in favor of treated hills of 9 pounds 13 ounces total product, 17 pounds 2 ounces marketable product.

(*c*) The treated portions of six rows of the Puritan variety yielded a total of 727 potatoes, weighing 93 pounds 6 ounces, 327 of which, weighing 70 pounds 4 ounces, were marketable, while the untreated portions of the same rows yielded 810 potatoes, weighing 83 pounds 12 ounces, of which 266, weighing 53 pounds 15 ounces, were of marketable size. There was thus an increase in favor of the treated hills of 9 pounds 10 ounces total, and 16 pounds 5 ounces marketable product.

(*d*) From the sprayed portions of five rows of Lee's Favorite potatoes, 584 tubers, weighing 72 pounds 12 ounces, were obtained, of which 249, weighing 55 pounds 4 ounces, were marketable; while the unsprayed portions of the same rows yielded 658 tubers, weighing 63 pounds 4 ounces, 175 of which were of marketable size, and weighed 38 pounds 12 ounces. Consequently, there was a difference in favor of the sprayed hills of 9 pounds 8 ounces total weight, and 16 pounds 8 ounces marketable weight.

(6) By combining the results given in paragraphs *a*, *b*, *c*, and *d*, we find that the treated portions of the twenty rows yielded a grand total of 2,471 potatoes, weighing 320 pounds 7 ounces, and that 1,128 of these were of marketable size, and weighed 244 pounds 2 ounces; while the

untreated portions of the same rows yielded a grand total of 2,771 potatoes, weighing 274 pounds 4 ounces, of which 948 were of marketable size and weighed 180 pounds 1 ounce. There was consequently a grand total increase in favor of the treated hills of 46 pounds 3 ounces total product, and 64 pounds 1 ounce marketable product.

(7) This 64 pounds 1 ounce increase in marketable product was obtained from 250 feet of row (20 times 12½). This represents an increase of 4.1 ounces to the foot. As there are 14,560 feet of row in an acre of potatoes as ordinarily planted, an increase of 4.1 ounces to the foot amounts to 59,696 ounces, or 3,731 pounds to the acre. Reducing this to bushels by dividing by 60 (the number of pounds to the bushel) we get an increase from the treatment of 62.2 bushels to the acre.

(8) There was in nearly every case a marked difference in the amount of scab on the treated and untreated tubers, the former being much more free from the disease.

CONCLUSIONS.

So far as a single experiment can be relied upon, the results here reported seem to indicate the correctness of the following provisional conclusions:

(1) That a large proportion of the injury done by the potato rot can be prevented by spraying the vines with the Bordeaux mixture.

(2) That this treatment apparently diminishes the amount of scab affecting the tubers.

(3) That by adding London purple to the mixture, the same treatment may be made effective in preventing the injuries of both the rot and Colorado Potato Beetle.

NEW EXSICCATI.

By D. G. Fairchild.

I. PARASITIC FUNGI OF CULTIVATED PLANTS.

The second fasicle of Messrs. Briosi & Cavara's Parasitic Fungi of Cultivated Plants* has been received. The fascicle contains many interesting things, the following of which are of special importance to this country:

PHYTOPHTHORA INFESTANS, (Mont.) DBy., on *Solanum lycopersicum.*
PLASMOPARA VITICOLA, B. & C., on *Vitis vinifera.*
UROMYCES TRIFOLII, Wint., on *Trifolium pratense.*
PUCCINIA GRAMINIS, Pers., (I), on *Berberis vulgaris.*
CERCOSPORA ROSÆCOLA, Pass., on *Rosa*, (*cult.*).
CONIOTHYRIUM DIPLODIELLA, (Speg.) Sacc., on *Vitis vinifera.*
COLLETOTRICHIUM LINDEMUTHIANUM, (S. & M.) B. & Cav., on *Phaseolus vulgaris.*

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* Funghi Parassiti Delle Piante Coltivate od Utili.